# PATENT COOPERATION TREATY



# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| Applicant's or agent's file reference<br>PSD/41145PCT1 | **FOR FURTHER ACTION** | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
|---|---|---|
| International application No.<br>PCT/IB 03/03016 | International filing date *(day/month/year)*<br>09.07.2003 | Priority date *(day/month/year)*<br>12.07.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>H04L12/18 | | |
| Applicant<br>NOKIA CORPORATION et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

| Date of submission of the demand | Date of completion of this report |
|---|---|
| 10.02.2004 | 26.10.2004 |
| Name and mailing address of the international preliminary examining authority:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br>Forster, G<br>Telephone No. +49 89 2399-8986 |

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB 03/03016

## I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

**Description, Pages**

| | |
|---|---|
| 1, 3-10 | as originally filed |
| 2 | received on 03.09.2004 with letter of 31.08.2004 |

**Claims, Numbers**

| | |
|---|---|
| 1-7 | as originally filed |
| 8-19 | received on 03.09.2004 with letter of 31.08.2004 |

**Drawings, Sheets**

| | |
|---|---|
| 1/3-3/3 | as originally filed |

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   *(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 1-19 |
| | No: | Claims | |
| Inventive step (IS) | Yes: | Claims | 1-19 |
| | No: | Claims | |
| Industrial applicability (IA) | Yes: | Claims | 1-19 |
| | No: | Claims | |

2. Citations and explanations

   **see separate sheet**

to section V.

1. The present invention relates to a method of operating broadcast or multicast apparatus, to a information service broadcaster or multicaster, to a method of operating a receiver. to a receiver and to a user interface, according to the features of claim 1 and the amended independent claims 7, 13 and 19 respectively.

2. The closest prior art document is considered to be document WO-A-01 99348 (first document cited in the international search report) and is acknowledged in the opening part of the description.

3. According to the features of the independent claims the inventive step consists in that a information service broadcaster or multicaster produces broadcasting or multicasting data indicating a category to which one or more announcements on a lower level and relating to an information service belong and data indicating the quantity of announcement information transmitted in respect of the lower level announcements.

   The underlying concept is not disclosed in or rendered obvious by the cited prior art documents. The subject-matter of the independent claims thus fulfils the requirements of Article 33 PCT.

4. The dependent claims contain further details on the subject-matter of the respective independent claims. These dependent claims merely limit the scope of protection sought by the independent claims and are therefore also considered to fulfil the requirements of Article 33 PCT.

transmitter for broadcast to the digital broadcast receiver as a time-sliced signal. The time-sliced signal comprises a continuous series of transmission bursts.

A DVB-T receiver terminal is able to determine information about IP sessions from IP session announcements. Announcements are structured in a hierarchal manner. At the lowest level, announcements in respect of a subcategory of information services may include a number of messages, each message having information describing the IP session, information descriptive of the content of the IP streams, information concerning the location (e.g. channel frequency, etc.) of the respective IP streams, information about schedules of sessions, and certain other parameters related to it. Above the lowest level, there are hierarchical levels of announcements, each level of which gives information only about announcements on an immediately lower level. The services typically are divided into different categories such that the highest (or root) level may include messages relating one-to-one to the categories of news, sport, entertainment, etc. Announcements in the sport category may then consist of messages each relating to a different one of football, hockey, athletics, etc. There may be any number of levels of announcement. An IP session announcement can be made using a session description protocol (SDP) message, which forms part of a session announcement protocol (SAP) message.

It is common for an IP session announcement at one level in the hierarchy to be transmitted on a channel having a different frequency to a channel on which an IP session announcement on a lower level, for example an immediately lower level, is transmitted. This means that it is not usually possible for a terminal having a single radio receiver to receive announcements on different levels simultaneously.

WO 01/99348 describes a multicast protocol.

**Summary of the Invention**

According to a first aspect of the invention, there is provided a method of operating broadcast or multicast apparatus, the method comprising: controlling the apparatus to broadcast or multicast, in respect of one or more announcements on a lower level and relating to a category of an information service, data indicating a category to which the announcements relate, and data indicating the quantity of announcement information transmitted in respect of the lower level.

8. An information service broadcaster or multicaster as claimed in claim 7, in which the announcement data relates to one or more announcements on an immediately lower level.

9. A method of operating a receiver (30), the method comprising:

receiving via a receiver (34) announcement data indicating a category to which one or more announcements on a lower level and relating to an information service belong, and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements; and

controlling the receiver to receive announcement data for a period of time dependent at least in part on the quantity data.

10. A method as claimed in claim 9, in which the announcement data relates to one or more announcements on an immediately lower level.

11. A method as claimed in claim 9 or claim 10 in which the controlling step includes directing the receiver to a location received as part of a relevant higher level announcement.

12. A method as claimed in any of claims 9 to 11, further comprising receiving in connection with the higher level announcement information indicating a timeout value, and controlling the receiver to cease receiving announcement data for a period of time dependent the timeout value, and to subsequently resume receiving announcement data.

13. A receiver (30) for receiving announcement data indicating a category to which one or more announcements on a lower layer and relating to an information service belong and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements; and arranged to receive announcement data for a period of time dependent at least in part on the quantity data.

14. A receiver as claimed in claim 13, in which the announcement data relates to one or more announcements on an immediately lower level.

15. A receiver as claimed in claim 13 or claim 14 which is arranged to be directed to a location identified by location information data receivable as part of the higher level announcement.

16. A receiver as claimed in any of claims 13 to 15, which is arranged to cease receiving lower level announcement data for a period of time dependent on a timeout value receivable by the receiver, and to resume subsequently receiving information service data.

17. A receiver as claimed in any of claims 13 to 16, which is a portable, battery-powered receiver.

18. A receiver as claimed in any of claims 13 to 17, which is arranged to receive time-sliced Internet Protocol datacast transmissions.

19. A user interface, useable with an electronic program or service guide, the user interface comprising:

a receiver module arranged to receive data indicating a category to which one or more announcements on a lower level and relating to an information service belong, and quantity data indicating the quantity of announcement information transmitted in respect of the lower level announcements, and

a display module arranged to display a number of category options, which options are selectable by a user, the number of category options being dependent at least in part on the quantity data.